وزارة التعليم العالي والبحث العلمي
جهاز الإشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي
قسم الاعتماد

دليل وصف البرنامج الأكاديمي والمقرر الدراسي

2026

1.Program Vision
To be a nationally and regionally distinguished and leading program in preparing scientific competencies capable of integrating physics and medical sciences and actively contributing to the development of healthcare technologies.

2.Program Mission
The Bachelor of Medical Physics program is committed to providing high-quality academic and practical education that enables students to acquire the knowledge and skills necessary to apply physical principles in medical fields, enhancing scientific research and community engagement, in line with academic quality standards and labor market needs.

3.Program Objectives
1-Provide distinguished scientific and practical education in medical physics that links physical foundations with modern clinical applications 2-Prepare graduates with the professional competence to safely and effectively use diagnostic and therapeutic medical devices. 3-Enhance students' research skills in medical imaging, radiation therapy, and radiation protection 4-Instill ethical and professional values in the practice of medical physics, ensuring adherence to safety and quality standards. 5-Enable graduates to positively interact with the community and participate in health awareness and radiation prevention programs. 6-Support the continuous professional development of faculty and students through training programs and partnerships with medical and academic institutions.

4.Program Accreditation
The program has not yet received programmatic accreditation, but as part of its efforts, the Department of Medical Physics is in the process of completing the requirements for programmatic accreditation.

5.Other external influences
Program Sponsors University of Al-Qadisiyah – College of Science – Department of Medical Physics

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	4	8	15.19%	
College Requirements	2	6	10.13%	
Department Requirements	45	179	74.68%	
Summer Training	2	/		
Other				

* This can include notes whether the course is basic or optional.

8. Expected learning outcomes of the program .	
knowledge	
1. Explains the fundamental and advanced principles of medical physics and their clinical and diagnostic applications. 2. Demonstrates the operating principles of various medical devices such as Magnetic Resonance Imaging (MRI), Computed Tomography (CT), and X-ray systems.	**Education outcomes**

3. Describes the principles of radiation safety and protective measures in medical facilities. 4. Develops self-learning skills and independent thinking to pursue postgraduate studies or enter the job market.	
Skills	
1. Operates and evaluates the performance of diagnostic and therapeutic medical devices efficiently. 2. Analyzes medical data using appropriate software and modern technologies. 3. Manages time effectively and actively participates in multidisciplinary teams. 4. Develops critical thinking and self-learning skills for continued education or effective professional practice.	**education Outputs**
values	
1. Adheres to professional conduct and ethical standards in medical and research settings. 2. Communicates effectively with both specialists and non-specialists, demonstrating respect for diversity and inclusiveness. 3. Exhibits social responsibility and participates in initiatives that promote public health.	**education Outputs**

9.Teaching and Learning Strategies

1. Explains the fundamental and advanced principles of medical physics.
2. Demonstrates the operating principles of medical devices such as MRI, CT, PET, and SPECT.
3. Describes radiation safety principles and protective measures.
4. Engages in practical training through laboratories, simulations, and project-based learning.
5. Utilizes e-learning tools, specialized software, and digital physics applications.
6. Participates in hands-on labs, simulation scenarios, and field-based projects.
7. Practices collaborative learning, role-playing, and group projects.
8. Applies problem-based learning, situational analysis, and interactive discussions.
9. Participates in community service activities, health awareness projects, and voluntary extracurricular initiatives.

	√	الفيزياء الطبية	الفيزياء الطبية	مدرس مساعد	ماجستير
√		تكنولوجيا المعلومات	تكنلوجيا المعلومات	مدرس مساعد	ماجستير

10. Evaluation methods

1. Explains the fundamental and advanced principles of medical physics.
2. Demonstrates the operating principles of medical devices such as MRI, CT, PET, SPECT.
3. Describes radiation safety principles and protective measures.
4. Engages in practical training through laboratories, simulations, and project-based
5. Utilizes e-learning tools, specialized software, and digital physics applications.
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8. Applies problem-based learning, situational analysis, and interactive discussions.
9. Participates in community service activities, health awareness projects, and volun extracurricular initiatives.

11. Faculty Members

Faculty Preparation		Specialization		Academic title	Degree
Outside Lecturer	Belongs to the Institution	Specialty	General		
	√	Medical Physics	Physics	Assistant Prof.	PhD
	√	Arabic Language	Arabic language	Assistant Lect.	Master's
	√	Physics	Physics	Prof.	PhD
	√	Internal Medicine	General surgery	Dr. Lect.	PhD
	√	Applied Nuclear Physics	Physics	Dr. Lect.	PhD
	√	English Literature	English Language	Assistant Lect.	Master's

	√	Computer science engineering and AI studies	Computer Eng.	Assistant Lect.	Master's
	√	Medical Physics	Medical Physics	Assistant Lect.	Master's
	√	Microbiology	Biology	Dr. Lect.	PhD
	√	Physics	Physics	Dr. Lect.	PhD
	√	Biophysics	Biophysics	Dr. Lect.	PhD
	√	Chemistry	Chemistry	Assistant Lect.	Master's
	√	Biology	Biology	Assistant Lect.	Master's
√		Law		Assistant Lect.	Master's
	√	Medical Physics	Medical Physics	Assistant Lect.	Master's
√		Information Tech.	Information Technology	Assistant Lect.	Master's

Professional Development

Mentoring new faculty members

1. Provide comprehensive orientation programs for new faculty members, including training courses on effective teaching methods, use of modern technology, assessment techniques, and curriculum design, aiming to enhance their teaching competencies and ensure academic quality.
2. Organize workshops for new faculty focused on improving the effectiveness of scientific research publication.

Professional development of faculty members

1. Provide orientation and qualification programs upon appointment, covering academic quality systems, learning outcomes, and university teaching ethics.
2. Train faculty members on curriculum design, course planning, and the use of e-learning systems.
3. Organize workshops on modern teaching methods, student-centered learning, and the integration of educational technology.
4. Conduct training sessions on effective assessment, development of evaluation tools, and test construction.
5. Encourage faculty members to attend local and international scientific conferences and seminars.
6. Offer courses on research skills, proposal writing, and publishing in peer-reviewed journals.
7. Provide financial and moral support for participation in research projects within and

12.Acceptance Criterion

1.The student must be a graduate of middle school or its equivalent, endorsed by the Iraqi Ministry of Education, for the following streams: Science, Applied Sciences, and Biology. A minimum of 58% (morning studies) and 55% (evening studies) is required
2.Male students who have graduated from the last three years are accepted
3.Female students who have graduated from the last five years are eligible to apply -3
4.The required original documents must be submitted in accordance with the conditions, including a middle school transcript containing grades and certified by the Education Directorate, within one week of the application date. Otherwise, admission will be void.
5.The top-ranked student in the grade is exempt from tuition fees for the following year

13.The most important sources of information about the program

1. Books prescribed by the Ministry of Higher Education and Scientific Research
2. External scientific sources .
3. Using libraries and the Internet .

14. Program Development Plan

To strive to make medical physics a concrete scientific discipline by applying physical phenomena, concepts, and principles to the reality of contemporary society.

Academic Program Discerption Form

University Name: Al-Warka University
Faculty Institute: Faculty of science
Scientific Department: Medical Physics
Academic or Professional Program Name: Bachelor's
Final Certificate Name: Medical Physics
Academic System: Bologna Process
Description Preparation Date: 9/4/2026
File Completion Date: 9/4/2026

Signature:
Head of Department:
Assit. Prof. Dr.
Ghania Salim Ghadhban
11/4/2026

Approval of The Assist. Dean:
Dr. Adel Ya'qoob

The file is checked by:
Unit of quality assurance and university performance
Director of Quality assurance and University Performance
Date:

Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	ANALYTICAL CHEMISTRY			Module Delivery	
Module Type	BASIC			Theory √ Lab √ Tutorial √ Seminar √	
Module Code	AMS1102				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level	1		Semester of Delivery		1
Administering Department	MPH		College		
Module Leader	Amna Abd El-Salam		e-mail		
Module Leader's Acad. Title		Assistant Lecturer	Module Leader's Qualification		Master of Science in Chemistry
Module Tutor	Amna Abd El-Salam		e-mail		
Peer Reviewer Name			e-mail		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسي ة	The student learns about: - The importance of analytical chemistry and its types. - The methods of finding concentrations of chemicals and the types of chemical titration. - The basic principles of quantitative and qualitative analysis methods in analytical chemistry.
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	The students will be able to: 1- Explain the fundamentals of analytical chemistry and the steps of a characteristic analysis, moreover, expresses the role of analytical chemistry in science. 2- Compare qualitative and quantitative analyses through, a- Expresses the quantitative analysis methods, b- Expresses the qualitative analysis methods, and c- Evaluate the analytical data in terms of statistics. 3- Defines acids and base with their theories and explain their behaviours, though, study their properties such as ionic equilibrium and buffers solutions. 4- Explain the volumetric analysis of the solutions and Express about the gravimetric calculations. 5- Express the titrimetric analysis methods, moreover, Expresses the terms such as standard solution, titration, back titration, equivalence point, end point, primary and secondary standard . 6- Be prepared to write research through analyzing the published research papers and writing a mini-research from them.
Indicative Contents المحتويات الإرشادي ة	Indicative content includes the following: 1- **The scope of analytical chemistry**: Science seeks ever-improved means of measuring the chemical composition of natural and artificial materials by using techniques to identify the substances that may be present in a material and to determine the exact amounts of the identified substance. 2- **Quantitative analysis:** this topic includes explaining the technique that uses mathematical and statistical modelling, measurement, and research to understand behavior, and how it will be useful to the student in their life. 3- **Review of elementary concept** important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units, the evaluation of analytical data: Definition of terms. An introduction to gravimetric analysis: Statistical analysis of data; rejection of data; precipitation methods; gravimetric factor. 4- **Acids and bases**: explain the meaning of their concept and the available theories that were obtained to describe their behavior.

	5- **Chemical equilibrium:** refers to the state of a system in which the concentration of the reactant and the concentration of the products do not change with time, and the system does not display any further change in properties. 6- **Ionic equilibrium:** The equilibrium established between the unionized molecules and the ions in the solution of weak electrolytes is called ionic equilibrium. 7- **Buffer solution**: describe an acid or a base aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. 8- **Volumetric analysis** is a quantitative analytical method which is used widely. As the name suggests, this method involves the measurement of the volume of a solution whose concentration is known and applied to determine the attention of the analyte.
Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	1- Lectures 2- Discussion 3- Brainstorming Problem solving 4- Practical presentations& Simulation Method 5- Lab works(Practical in computer Lab 6- Projects Self-learning 7- Cooperative Learning.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem.) الحمل الدراسي المنتظم للطالب خلال الفص ل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem.) الحمل الدراسي غير المنتظم للطالب خلال الفص ل	100	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem.) الحمل الدراسي الكلي للطالب خلال الفص ل	175		

Module Evaluation تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	6	5	2,4,5,7,9 ,12	1, 2, 4 and 5.
	Seminar	7	10	2,4,6,8,9,11 and 13	2 and 5
	Projects	3	10	10 and 15	6
	Reports/lab	7	10	All experiments	1-5
	Discussion/lab	3	5	5,9,13	1-5
Summative assessment	Midterm Exam	1	10	8	1,2 and 3
	Final Exam	1	50	15	1-5
Total assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظر ي	
	Material Covered
Week 1	Lecture 1: The Scope of Analytical Chemistry.
Week 2	Lecture 2: Quantitative Analysis.
Week 3	Lecture 3: Qualitative Analysis.
Week 4	Lecture 4: Acids and Bases.
Week 5	Lecture 5: Theories of Acids and Bases.
Week 6	Lecture 6: Chemical Equilibrium.
Week 7	Lecture 7: Ionic Equilibrium.
Week 8	Midterm Exam
Week 9	Lecture 8: Buffer Solution.
Week 10	Lecture 9: An Introduction to Volumetric Methods of Analysis.
Week 11	Lecture 10: Volumetric Calculations.
Week 12	Lecture 11: Acid Base Titration.
Week 13	Lecture 12: Precipitation Titration.
Week 14	Lecture 13: Reduction Oxidation Titration.
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختب ر	
	Material Covered
Week 1	Laboratory Safety and Acquaintance with Glassware and Apparatus in the Analytical Chemistry Laboratory
Week 2	Exp1: Prepare 0.1 M of Hydrochloric Acid Solution
Week 3	Exp2: Prepare 0.1 M of Sodium Chloride Powder.
Week 4	Exp3: Prepare 0.1 N of Sodium Hydroxide Powder.
Week 5	Discussion for the Reports of Experiment 1, 2 and 3.
Week 6	Discussion of Projects-1
Week 7	Exp4: Precipitation of Cation Elements (Ag, Cu and Pb ions).
Week 8	Exp5: Precipitation of Anion Elements (Cl and Br)
Week 9	Discussion for the Reports of Experiment 4 and 5.
Week 10	Discussion of Projects-2
Week 11	Exp6: Titration of Strong Acid with Strong Base
Week 12	Exp7: Titration of Sodium Hydroxide with Hydrochloric Acid Titration of Strong Acid with Weak Base
Week 13	Discussion for the Reports of Experiments 6 and 7
Week14	Discussion of Projects-3
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدري س		
	Text	**Available in the Library?**
Required Texts	7th Edition of Analytical Chemistry Fundamentals of Analytical Chemistry Principles and Practice of Analytical Chemistry	
Recommended Texts	Modern Analytical Chemistry.	
Websites	https://en.wikipedia.org/wiki/Analytical_chemistry	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	COMPUTER SCIENCE			Module Delivery	
Module Type	SUPPLEMENT			Theory √ Lab √	
Module Code	UOM105				
ECTS Credits	3				
SWL (hr/sem)	75				
Module Level	1		Semester of Delivery		1
Administering Department	MPH		College		
Module Leader	Russell Yusuf		e-mail		
Module Leader's Acad. Title		Assistant Lecturer	Module Leader's Qualification		Master of Science in computer
Module Tutor	Russell Yusuf		e-mail		
Peer Reviewer Name			e-mail		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسي ة	This course aims at: 1- Introducing a brief idea about the development of Computers. 2- Having a good about the desktop, settings and personalization of Windows. Next, we will learn to organize information, manage files and settings in the Setting and Control Panel sections. In the end, we will examine the Windows applications. 3- Learning about the MS Word: we are going to review Microsoft Office Word and check how we can edit our texts, use the professional tools of this software and prepare our texts for presentation to other users. 4- Learning the MS Excel: data entry, data analysis tools and most used functions, discussed with examples. 5- Learning MS PowerPoint: teaching the different PowerPoint tools, lessons are taught to show creative ideas for using the tools. The ideas used in these lessons will help you to be creative and professional in designing presentation slides as well as producing graphic content.
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	The student would be able to: 1- Use window operation system user interface. 2- Gain a thorough understanding of the Windows operating system, its features, and functionality. 3- Develop the ability to navigate and manage the Windows interface, MS word, MS excel, and PowerPoint efficiently. 4- Acquire skills in configuring system settings, managing files and folders, and using built-in tools and utilities. 5- Learn to create and format documents, spreadsheets, presentations, and emails effectively. 6- Understand advanced features of Microsoft Office, such as formulas and functions in Excel, collaboration tools, 7- Develop problem-solving skills specific to Windows and Microsoft software, such as diagnosing and resolving common software issues. 8- Learn to troubleshoot and debug problems related to Windows configuration, software installations, and compatibility.
Indicative Contents المحتويات الإرشادي ة	Indicative content includes the following: The purpose of computer science training is to review and learn the Windows operating system and Microsoft software. The operating system manages system resources and provides a platform where other software can run and users can use their services. Also, MS word, excel, and power point are so useful for create edit any kind of documents

Learning and Teaching Strategies

استراتيجيات التعلم والتعلي م

Strategies	Lectures: Engaging and interactive lectures to introduce new concepts, theories, and problem-solving techniques. Hands-on Practice: Active engagement and practical exercises are key to learning computer software effectively. Demonstration and Explanation: Instructors demonstrate software features and explain concepts using examples and visuals. Step-by-Step Tutorials: Providing clear instructions and visuals helps learners follow along and grasp software functionalities. Collaborative Learning: Encouraging collaboration among learners through group projects or peer feedback fosters a supportive learning environment. Online Resources and Documentation: Supplementing learning with online resources, official documentation, and forums enhances understanding and troubleshooting. Real-World Applications: Relating software learning to real-world scenarios increases student engagement and practical relevance.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL .) الحمل الدراسي المنتظم للطالب خلال الفص ل**(h/sem**	60 hrs.	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4 hrs.
Unstructured SWL .) الحمل الدراسي غير المنتظم للطالب خلال الفص ل**(h/sem**	15 hrs.	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1 hrs.
Total SWL .) الحمل الدراسي الكلي للطالب خلال الفص ل**(h/sem**	75 hrs.		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative Assessment	**Quizzes**	2	5	4,7	1,2,3
	Homework	2	10	3,10	3,4

	Lab participation	5	5	2,4,6,8,10	1,2,3,4,8
	Computer Driving	1	10	9	3,4,6,7,8
	Document Editing	1	10	12	3,6,7
Summative Assessment	**Midterm Exam**	1	10	8	6,7,8
	Final Exam	1	50	15	1,6,7,8
Total Assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي	
	Material Covered
Week 1	Introduction to Operating Systems
Week 2	Navigating the Windows Interface
Week 3	File and Folder Management in Windows
Week 4	Microsoft Word Basics
Week 5	Advanced Features in Microsoft Word
Week 6	Learning Microsoft Excel: Fundamental Concepts
Week 7	Working with Functions and Formatting in Excel
Week 8	Advanced Techniques in Excel
Week 9	Microsoft PowerPoint Essentials
Week 10	Customizing and Formatting Presentations
Week 11	Time and Task Management Tools
Week 12	Information Security and Privacy
Week 13	Troubleshooting Computer Issues
Week 14	Utilizing Electronic Tools for Collaborative Work
Week 15	Comprehensive Review and Practical Test

Delivery Plan (Weekly Practice Syllabus) المنهاج الاسبوعي العملي	
	Material Covered
Week 1	Desktop, Settings and Personalization, Setting the Background, Color setting, Start Menu.
Week 2	Organizing Information, Managing Files and This PC, Set File Explorer Home Page, Lab participation, Computer Driving.
Week 3	Control Panel, Management of Default Software, Date and Time, Font, Managing Languages, H.W_1.

Week 4	MS Word: Editing Tools, Font Settings, Paragraph Settings, Lab Participation, Computer Driving.
Week 5	Inserting Information, Working with the Page, Tables, Images.
Week 6	Formatting the File, Familiarity with Ready Templates and How to Create a New Template, Lab Participation.
Week 7	MS Excel: Formatting in Excel, Drawing and Formatting Cells, Rows, Columns and Worksheets.
Week 8	Mid-Term Exam, practical hr. Lab participation
Week 9	Formatting Cells with Numeric Contents, Using Style for Quick Formatting.
Week 10	Conditional IF Function for Conditional Calculations in Excel, H.W_2, Lab Participation, Document Editing.
Week 11	MS PowerPoint: Getting to Know the PowerPoint User Environment.
Week 12	File Menu and Settings, Document Editing
Week 13	The Quick Access Menu, Ribbon and its Tools, Ruler, Grid Lines and Guide Lines.
Week 14	Review and Assessment.
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Andy Rathbone, Windows 10 For Dummies , 4th Edition Joan Lambert and Curtis Frye: Microsoft Office 2016 Step by Step	No
Recommended Texts	Windows Operating System Fundamentals: Windows Operating System Fundamentals, 2019. John Walkenbach: Microsoft Excel 2016 Bible	No
Websites	- https://edu.gcfglobal.org/en/computerbasics/ - https://edu.gcfglobal.org/en/word/ - https://edu.gcfglobal.org/en/excel/ - https://edu.gcfglobal.org/en/powerpoint/	

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Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

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MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية .					
Module Title	GENERAL BIOLOGY			Module Delivery	
Module Type	BASIC			Theory √ Lab √ Tutorial √ Seminar √	
Module Code	MPH1103				
ECTS Credits	9				
SWL (hr/sem)	175				
Module Level	1		Semester of Delivery		1
Administering Department	MPH		College		
Module Leader	Fatima Jassim		e-mail		
Module Leader's Acad. Title		Assistant Lecturer	Module Leader's Qualification		Master of Science in Biology
Module Tutor	Fatima Jassim		e-mail		
Peer Reviewer Name			e-mail		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	**The aims of the syllabus are to:** • Contribute to students' general education through their involvement in the process of scientific investigation and the acquisition of biological knowledge and understanding • Encourage in students an attitude of scientific enquiry, of curiosity and self-discovery through (i) individual study and personal initiative (ii) team work (iii) class-directed work • Develop an understanding of biological facts and principles • Enhance an interest in and develop an appreciation of the nature and diversity of organisms • Create an awareness of the application of biological knowledge to modern society in personal, social, economic, environmental, industrial, agricultural, medical, waste management and other technological contexts • Develop in students an ability to make informed evaluations about contemporary biological issues.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon successful completion of this course, the student will be able to do the following: 1-Identifying the steps in the scientific method . 2- Identifying function of cellular organelles. 3- Describing the cellular membrane and the methods of cellular transport 4- Differentiating between molecular structure of carbohydrates, lipids, proteins and nucleic acids. 5-Recognizing the differences in chemical bonding and describe the structure of an enzyme and the enzyme's role in metabolism. 6- Describing the structure of a chromosome including being able to distinguish between chromatin, chromatids, and centromere. 7- Explaining the process of meiosis , define the following terms: gene, allele, locus, dominant, recessive, phenotype, genotype, homozygous and heterozygous 8- Explaining the structure and types of Animal and Plant tissues. 9- Recognizing the differences of Animal Cell Culture and Plant Cell Culture 10- Demonstrating an understanding of the pathways that constitute cellular respiration and photosynthesis

	11- Distinguishing between prokaryotic and eukaryotic cells 12- Explaining the anatomy of bacteria and explain techniques used in bacterial smear preparation, such as Gram stainin.
Indicative Contents المحتويات الإرشادي ة	Indicative content includes the following: • Explaining the scope of biology and molecular basis of life (1) . • Describing life activities from the cellular point of view (2) . • Identifying the principal features of different groups of living things (3). • Explaining the scope of Tissues, bone and cartilages (8) . • Outlining basic processes of energy transduction and synthesis of intermediate or final products in living cells (4,5) . • Understanding the basic concepts of genetics and inheritance (6). • Understanding the concepts of infection and immunity (12) . • Classifying organisms based on their cellular organization and complexity (11) . • Explaining components, processes and interrelationships within a given ecosystem (3). • Explaining the scope of Plant tissues and Photosynthesis(10). • Develop scientific attitude, skill and conduct biological experiments using scientific procedures (12) . • Manipulating basic biological tool, record data and draw conclusions (12,9).
Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	The ability to: - identify problems, make predictions, develop hypotheses and devise means of carrying out investigations to test the hypotheses; - plan and execute experimental procedures and operations in an appropriate sequence; - use experimental controls where appropriate; - modify an original plan or sequence of operations as a result of difficulties encountered in carrying out experiments or obtaining unexpected results; - take into account possible sources of errors and danger in the design of an experiment; - select and use appropriate equipment and techniques.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL **(h/sem)**الحمل الدراسي المنتظم للطالب خلال الفصل	75 hrs.	**Structured SWL** **(h/w)**الحمل الدراسي المنتظم للطالب أسبوعيا	5hr.
Unstructured SWL **(h/sem)**الحمل الدراسي غير المنتظم للطالب خلال الفصل	100hrs.	**Unstructured SWL** **(h/w)**الحمل الدراسي غير المنتظم للطالب أسبوعيا	7hrs.
Total SWL **(h/sem)**الحمل الدراسي الكلي للطالب خلال الفصل	175 hrs.		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	13	5	1-13	All points
	Assignments	6	5	3,5,7,9,11,13	1,3,9,12
	Projects / Lab.	6	15	3,5,7,9,11,13	2,6,8,11
	Report	13	15	1-13	4,5,7,10
Summative assessment	**Midterm Exam**	1	10	7	1-10
	Final Exam	1	50	16	All points
Total assessment			100	16	All points

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Biology
Week 2	Cell Structure
Week 3	Cytoplasmic membrane
Week 4	Organic Compounds a. Carbohydrates b. Lipids c. Proteins d. Nucleic Acids
Week 5	Energy and Metabolism

Week 6	DNA: The Genetic Material
Week 7	The Chromosomal Basis of Inheritance
Week 8	How Cells Divide
Week 9	Tissues, bone and cartilages
Week 10	Plant tissues and organs
Week 11	Photosynthesis
Week 12	Prokaryotes and Viruses
Week 13	Anatomy of bacteria: Surface appendages, Capsule, Cell wall of G.+ve & G –ve bacteria.
Week 14	Protists and Fungi
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	Orientation to the laboratory. Rules of conduct and general safety .
Week 2	Microscope & cell structure
Week 3	Cells : Prokaryotic Cells and Eukaryotic Cells
Week 4	Plant Cells, and Animal Cells
Week 5	Mitosis and Meiosis
Week 6	Animal Cell Culture
Week 7	The tissues (Single epithelial tissue)
Week 8	Plant tissue under microscope
Week 9	Plant Cell Culture
Week 10	Aseptic procedures ,culture media and habitat of microbiology
Week 11	Isolation and preparation of pure culture bacteria and fungi
Week 12	Microscopic examination and general morphology of fungi
Week 13	Bacterial smear preparation
Week14	Simple staining of bacteria (Gram staining).

Week 15	Final exam

Learning and Teaching Resources مصادر التعلم والتدري س		
	Text	**Available in the Library?**
Required Texts	Mader, S. S. (2004). **Human biology**. *(No Title)*. Lowe, J. S., & Anderson, P. G. (2014). *Stevens & Lowe's* ***Human Histology*** *E-Book: With STUDENT CONSULT Online Access*. Elsevier Health Sciences. Weaver, R. (2011). *EBOOK:* ***Molecular Biology***. McGraw Hill. Alberts, B., Hopkin, K., Johnson, A. D., Morgan, D., Raff, M., Roberts, K., & Walter, P. (2018). ***Essential cell biology: Fifth international student edition***. WW Norton & Company. Jawetz, M., Melinck, J., Adberg, E. A., Broks, G. O., Butel, J. S., & Ornston, N. L. (2012). **Medical Microbiology** 25.	Yes Yes Yes Yes Yes
Recommended Texts	Davis, J. (Ed.). (2011). ***Animal Cell Culture***. Wiley Blackwell.	No
Websites	-	

APPENDIX:

GRADING SCHEME مخطط الدرجا ت				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	MECHANICS		Module Delivery	
Module Type	BASIC		Theory √ Lab √ Tutorial √ Seminar √	
Module Code	AMS1101			
ECTS Credits	9			
SWL (hr/sem)	175			
Module Level	1	Semester of Delivery	1	
Administering Department	MPH	College		
Module Leader	Arshad Hammoud	e-mail		
Module Leader's Acad. Title	Professor	Module Leader's Qualification	PhD of Science in Physics	
Module Tutor	Arshad Hammoud	e-mail		
Peer Reviewer Name		e-mail		
Review Committee Approval		**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسي ة	The course aims to provide students with information and skills in mechanics necessary for the undergraduate level. building a strong background for those who will continue to study materials related to analytical mechanics applications
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	The outcomes of study weeks . 1. Learning about mechanics in general physics . 2. Listing the different terms associated with mechanics. 3. Summarizing what is meant by basic mechanics. 4. DISCUSSION, BODY POWER, POWER AND energy of work . 5. Descriptions OF NEWONS LAWS. 6. Selecting sample machines. 7. Identifying the basic circuit elements and their applications. 8. The ability for making and managing discussions. 9. The good Explanation of density and elasticity .
Indicative Contents المحتويات الإرشادية	- Providing students with the basics and additional topics related to the outputs of thinking. -Directing questions to the students and forming discussion groups during the lectures to discuss the solution of the question that requires - Thinking and analyzing. - Giving students homework to solve questions that require self-explanations. - Assigning students to prepare reports related to the course - Applying theoretical concepts in various physical issue
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL .) **h/sem)**الحمل الدراسي المنتظم للطالب خلال الفص ل	75	**Structured SWL** **h/w)**الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem.) الحمل الدراسي غير المنتظم للطالب خلال الفص ل	100	**Unstructured SWL** **h/w)**الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL .) **h/sem)**الحمل الدراسي الكلي للطالب خلال الفص ل	175		

Module Evaluation تقييم المادة الدراسي ة					
As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	1	5	3,5,7,9,10,11,13	1,2,3
	H.W	1.30	10	2,4,8,12,13	3,4,5,6
	seminar	6	5	2,4,8,12,13	4,5,6
	Discussion /experiments	10	5	6,7,12,13,14	2,4,10
	Projects .	15	5	6,13,14	5,10
	Report/lab	10	10	1,2,3,4,5,8,9,10,11	4,5
Summative assessment	**Midterm Exam**	1	10	6	6,8,9
	Final Exam	3	50	15	all
Total assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	INRODACTION TO VECTERS
Week 2	UNIFORML ACCELERATHD MOTION
Week 3	NEWONS LAWS
Week 4	EQUILBRIUM UNDER THE ACTION CONCURRENT FORCES

Week 5	EQUILBRIUM OF A RIGED BODY COPLANAR FORCES
Week 6	WORK ENERGY AND POWER
Week 7	SAMPLE MACHINES
Week 8	Med- term exam
Week 9	IMPULSE AND MOMENTUM
Week 10	ANGULAR MOTION IN A PLANE
Week 11	RIGID- BODY ROTATION
Week 12	DENSITH: ELASTICTTY/Seminar
Week 13	Assignments FLUIDS AT REST
Week 14	FLUIDS IN MOTION
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
weeks	**Material Covered**
Week 1	EXP 1: Boyle's Law
Week 2	EXP 2: The Simple pendulum
Week 3	EXP 3: The Spiral Spring
Week 4	EXP 4: Static Torsion
Week 5	EXP 5: Vector Force Table
Week 6	Discussion of the project 1
Week 7	Discussion for the experiments (1-5)
Week 8	EXP 6: ARCHIMEDES' PRINCIPLE EXPERIMENT
Week 9	EXP 7: Surface tension
Week 10	EXP 8: Viscosity of liquids
Week 11	EXP 9: Rotational motion
Week 12	EXP 10: Coefficient of fraction
Week 13	Discussion for the experiments (6-10)
Week14	Discussion of the project 2

Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Schaum's outlines of theory and problems of college physics	
Recommended Texts	Lecture Notes on Classical Mechanics for Physics	
Websites	https://sites.astro.caltech.edu/~golwala/ph106ab/ph106ab_notes.pdf	

APPENDIX:

GRADING SCHEME مخطط الدرجا ت				
Group	**Grade**	**التقدي ر**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوس ط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راس ب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	ENGLISH LANGUAGE	Module Delivery	
Module Type	SUPPLEMENT	Theory √ Seminar √	
Module Code	UOM102		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	2
Administering Department	MPH	College	
Module Leader	Zahraa Ahmad	e-mail	
Module Leader's Acad. Title	Assistant Lecturer	Module Leader's Qualification	Master of English
Module Tutor	Zahraa Ahmad	e-mail	
Peer Reviewer Name		e-mail	
Review Committee Approval		**Version Number**	

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسي ة	This course aims at: 1- Enhancing a mastery over the basic structure of a standard English Sentence. and the type of language used in scientific fields of study. 2- Knowing a good bit of information about the basic phrases in English Language regarding their formation, position in sentence word order, uses in real life situation as related to their field of work. 3- Focusing on the difference between simple and continuous present and past tenses as related to their study and career. 4- Enabling students to write certain types of expressions and texts useful for their field of study and future career. 5- Stimulating and directing students to speak and practice English language correctly, asserting the type of language used in real life situations and scientific field of study. 6- Specifying points of weakness in students' performance, trying to amend them. 7- Building a type of scheme in students' minds about what writing and speaking standard English language is supposed to be. 8- Forcing students to think critically while doing the assignments, quizzes and other similar activities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	The student would be able to: 1- Speak and write a good standard sentence or type of English Language. 2- Differentiate between types of basic tenses. 3- Have a fluency while speaking the English Language. 4- Write acceptable formal and informal texts. 5- Comprehend the idea behind string of words in a sentence. 6- Work collectively within a teamwork.
Indicative Contents المحتويات الإرشادي ة	Indicative content includes the following: - Word order: Statements, questions imperatives (command, request, instructions). - Phrases: Nouns, Adjectives, Adverbs, Verbs, Prepositions. - Verbs: Tenses (Form and basic uses), Passive. - Knowing how to say and write some useful texts. - Some text for reading comprehension and videos or recordings for listening. - Basic guide lines in writing a summary, letters, paragraphs, CV. - Topics for discussion. -

Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	The program is designed to have two theoretical hours in points related to grammar and other three hours for the sake of practicing including doing the exercises. Before an exam, the student will have the chance to review the previous given materials. The practical hours includes some basic information in pronunciation, reading, speaking, listening and writing skills. The program instructor will follow a mixture of traditional and communicative approaches to achieve the above mentioned aims. The students will be asked to do some exercises and quizzes in relation to grammar. They could be divided into groups having certain duties related to different practical activities to be done by them. Each student will have his own evaluation which will raise the grade of each group work as a whole. The best group work will be rewarded at the end of the semester with some additional marks for their good performance during the course. Doing quizzes and assignments inside the classroom are very important to adjust some important grammatical points. To ensure self-learning, some websites and parts of texts related to the given lectures are going to be given to them. Certain activities such as speaking and listening are going to be given forward so as to be ready for the duties while practicing them inside the classroom.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL .) **(h/sem**الحمل الدراسي المنتظم للطالب خلال الفص ل	59 hrs.	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4 hrs. (2+2)
Unstructured SWL .) **(h/sem**الحمل الدراسي غير المنتظم للطالب خلال الفص ل	66 hrs.	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5 hrs.
Total SWL .) **(h/sem**الحمل الدراسي الكلي للطالب خلال الفص ل	125 hrs.		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative Assessment	**Quizzes**	3	5	2,6,13	1, 2, 4
	Assignments	4	5	3,6,11,13	1,2,4, 5,6
	Reading	2	10	3,6,9,11,13	1, 2, 7
	Writing	4	10	1,2,4,5,6,7,9 ,13, 14	1, 2, 4,, 7
	Speaking	4	10	Continuous	1, 2, 3, 4,7
Summative Assessment	**Midterm Exam**	1	10	7	1, 2, 4,
	Final Exam	1	50	15	1,2,4,5,
Total Assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Word Order in Standard English – Statement: Positive vs. Negative, Questions.
Week 2	Word Order in Standard English – Imperative Sentence: Instructions, Request, Command.
Week 3	Nouns: singular nouns vs. plural nouns, Gender, Pure nouns-Derived nouns, Articles.
Week 4	Nouns: Pronouns, Expressions of Quantity, Position in Word Order.
Week 5	Adjectives: Pure adjectives -Derived adjectives, Comparison Degrees, Position in Word Order.
Week 6	Adverbs: Pure adverbs-derived adverbs, Position in Word Order, Adverbs of Degree.
Week 7	Mid-Term Exam
Week 8	Expressing: Time, conditional, result, reason, purpose, contrast.
Week 9	Prepositions: Uses, position in Word Order.
Week 10	Verbs: Tenses-Present (Simple vs. Continuous).
Week 11	Verbs: Tenses-Past (Simple vs. Continuous).

Week 12	Verbs: Futurity, Modals (can, may, should, etc.).
Week 13	Verbs: Passive Voice.
Week 14	General Review and some Additional Notes.
Week 15	Final Exam

Delivery Plan (Weekly Practice Syllabus)	
Week	**Material Covered**
Week 1	Alphabetical Order, Word Order: Reforming Sentences, Introducing Oneself, Writing Simple Sentences.
Week 2	Jobs and Specialties in a Hospital. Listening 1, Writing Different Types of Sentences, Describing something around.
Week 3	Assignment 1, Reading and Writing Numbers in different Situations. Reading passage 1
Week 4	Different Types of Derived Nouns and How to Use them in a Sentence. Listening 2, Writing a Summary.
Week 5	Countries, Nationalities, Languages, Parts of Human Body, Listening 3, Writing a Short Report of an Experiment .
Week 6	Assignment 2, Days, Months, Colors, Reading Passage 2, Writing a Letter.
Week 7	Clothes, Continents, Pronouncing the suffix (s), Listening 4 Writing a Good Paragraph.
Week 8	Expressing: Time, conditional, result, reason, purpose, contrast.
Week 9	Things in the Lab\Hospital, Reading Passage 3, Pronouncing the suffix (-ed), Writing a Good paragraph.
Week 10	Verbs: Tell-Say, Reply-Answer-respond, Fill-Full, Listening 5, Punctuation Marks.
Week 11	Assignment 3, Some Silent Letters in English Words, Reading passage 4
Week 12	Like-love, Listening 6, Performing Certain Situation 1, a Topic for Discussion.
Week 13	Performing Certain Situation 2, Reading Passage 5, Writing a Good CV.
Week 14	Performing Certain Situation 3, Writing about Future Dreams or Plans.
Week15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدري س		
	Text	**Available in the Library?**
Required Texts	John and Liz Soars, New Headway Plus, United Kingdom: Oxford University Press.	Yes

Recommended Texts	Baily, Stephen. 2011. *Academic writing*. London: Rutledge. Hewings, Martin. 2012. *Advanced grammar in Use.* United Kingdom: Cambridge university Press.	Yes Yes
Websites	- https://www.oxfordonlineenglish.com/ - https://www.grammarly.com/ - https://www.softschools.com/language_arts/reading_comprehension/science/8/magnetism/ - https://eslflow.com/	

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Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	MATHEMATICS	Module Delivery	
Module Type	BASIC	Theory √ Tutorial √	
Module Code	MPH1208		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	2
Administering Department	MPH	College	
Module Leader	Amer Qasim	e-mail	
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	PhD of Science in Physics
Module Tutor	Amer Qasim	e-mail	
Peer Reviewer Name		e-mail	
Review Committee Approval		**Version Number**	

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسي ة	This course aims at: 1- Developing a solid understanding of fundamental mathematical concepts and their applications. 2- Fostering critical thinking and problem-solving abilities by engaging students in analyzing complex mathematical problems and applying appropriate strategies and techniques to arrive at logical solutions. 3- Enhancing students' ability to communicate mathematical ideas effectively, both orally and in written form, through clear explanations, rigorous proofs, and mathematical modeling. 4- Promoting a deep understanding of mathematical concepts, principles, and relationships by encouraging students to explore mathematical structures, patterns, and connections within and across different areas of mathematics. 5- Cultivating mathematical reasoning and logical thinking skills by providing opportunities for students to construct and evaluate mathematical arguments, justify mathematical claims, and make conjectures. 6- Encouraging students to appreciate the beauty and elegance of mathematics by exposing them to diverse mathematical topics, including geometry, algebra, calculus, statistics, and discrete mathematics. 7- Promoting mathematical literacy and numeracy by helping students develop a practical understanding of mathematical concepts and their applications .
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	The student would be able to: 1- Master the proficiency in applying differential calculus concepts, including derivatives and rates of change. 2- Have the competence in utilizing integral calculus techniques to find areas, volumes, and solve related problems. 3- Analyze mathematical models involving differentiation. 4- Master the solving of practical problems using integral calculus. 5- Improve critical thinking and problem-solving skills through the study of differential mathematics. 6- Develop mathematical reasoning and logical thinking abilities in the context of calculus.
Indicative Contents المحتويات الإرشادي ة	Indicative content includes the following: Introduction to differentiation: limits, derivatives, and their basic properties. Applications of differentiation: rates of change, optimization, and related rates. Introduction to integration: antiderivatives, definite and indefinite integrals. Techniques of integration: substitution, integration by parts, and partial fractions. Applications of integration: areas under curves, volumes, and solving practical problems.

Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	Lectures: Engaging and interactive lectures to introduce new concepts, theories, and problem-solving techniques. Tutorials: Small group sessions where students can actively participate in solving mathematical problems, reinforcing their understanding and receiving feedback. Practical Exercises: Assignments and homework that provide opportunities for students to practice and apply the learned mathematical principles. Collaborative Learning: Group projects and discussions that encourage peer-to-peer interaction and collaborative problem-solving, fostering a deeper understanding of mathematical concepts. Technology Integration: Utilizing mathematical software, computer simulations, and online resources to enhance visualization and exploration of mathematical concepts.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL **(h/sem)**الحمل الدراسي المنتظم للطالب خلال الفص ل	45 hrs.	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3 hrs.
Unstructured SWL **(h/sem)**الحمل الدراسي غير المنتظم للطالب خلال الفص ل	105 hrs.	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7 hrs.
Total SWL **(h/sem)**الحمل الدراسي الكلي للطالب خلال الفص ل	150 hrs.		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative Assessment	**Quizzes**	2	10	3,8,13	1,4
	Homework	2	10	2,6	2,5
	Class participation	4	10	4,6,9,12	1,2,3,4
	Problem-Solving	4	10	3,7,11,14	5,6

Summative Assessment	**Midterm Exam**	1	10	8	1,2,3
	Final Exam	1	50	15	1,2,3,4,5,6
Total Assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظر ي	
	Material Covered
Week 1	Reviewing of Algebraic Concepts, Algebraic Expressions, Exponents and Logarithms.
Week 2	Differentiation, Techniques of Differentiation, Functions and Graphs, H.W_1.
Week 3	More Differentiation, Optimization Problems Using Derivatives, Problem-Solving.
Week 4	Techniques of differentiation, Limits and Continuity, Class participation.
Week 5	Applications of Derivatives, Solving First-Order Ordinary.
Week 6	Continuity of functions H.W_2, Class participation.
Week 7	Differential Equations, Applications of Differential Equations, Problem-Solving.
Week 8	Mid-Term Exam.
Week 9	Integration, Class Participation.
Week 10	Antiderivatives and Indefinite Integration.
Week 11	Techniques of Integration, Problem-Solving.
Week 12	Applications of Integration, Class Participation.
Week 13	Exponential and Logarithmic Functions.
Week 14	Review and Assessment, Problem-Solving
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدري س		
	Text	**Available in the Library?**
Required Texts	Gilbert Strang, Calculus, Massachusetts Institute of Technology: Wellesley-Cambridge Press.	No

Recommended Texts	James Stewart, McMaster University 2008. *United States of America*.	No
Websites	- https://www.khanacademy.org/ - https://www.mathsisfun.com/ - https://brilliant.org/ - https://www.youtube.com/@DrTrefor	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	MATLAB			Module Delivery	
Module Type	SUPPLEMENT			Theory √ Lab √	
Module Code	MPH1219				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		Semester of Delivery		2
Administering Department	MPH		College		
Module Leader	Muntazir Hazem		e-mail		
Module Leader's Acad. Title		Assistant Lecturer	Module Leader's Qualification		Master of Science in Computer
Module Tutor	Muntazir Hazem		e-mail		
Peer Reviewer Name			e-mail		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسي ة	This course aims at: 1- Introducing MATLAB: The lectures aim to familiarize students with the MATLAB software, its interface, basic commands, and programming concepts. 2- Knowing MATLAB Fundamentals: The lectures aim to provide a solid foundation in MATLAB programming, covering topics such as data types, arrays, matrices, operators, functions, and control flow structures. 3- Exploring Data Analysis and Visualization: The lectures aim at enabling students to explore various techniques and tools available in MATLAB for data analysis, manipulation, and visualization. This may include topics such as data importing, filtering, statistics, plotting, and creating graphical representations of data. 4- Enhancing Algorithm Development: The lectures aim to enhance students' skills in algorithm development using MATLAB. This involves understanding and implementing algorithms, problem-solving strategies, and efficient programming techniques. 5- Introducing Numerical Methods: The lectures aim to introduce students to numerical methods and how MATLAB can be used to solve mathematical problems such as solving equations, numerical integration, interpolation, and optimization. 6- Demonstrating Simulations and Modeling: The lectures aim to demonstrate how MATLAB can be used for simulation and modeling purposes. This may include topics like creating mathematical models, simulating physical systems, and analyzing simulation results

Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	The student would be able to: 1- Understand the basics of MATLAB software and its command syntax. 2- Apply MATLAB programming concepts to solve computational problems. 3- Manipulate and analyze data using MATLAB's built-in functions. 4- Develop algorithms and implement numerical methods using MATLAB. 5- Perform basic data visualization using MATLAB's plotting capabilities. 6- Solve mathematical equations and perform mathematical computations using MATLAB. 7- Apply MATLAB for basic simulations and modeling tasks. 8- Apply critical thinking and problem-solving skills to MATLAB projects. 9- Document and present MATLAB projects effectively.

Indicative Contents المحتويات الإرشادي ة	Indicative content includes the following: It encompasses topics such as variables and data types, control flow structures, functions and scripts, data import/export, data analysis, plotting and visualization, numerical computations, algorithm development, simulations and modeling, advanced topics (if applicable), problem-solving and application, project work, and documentation/presentation skills. These contents aim to provide students with a comprehensive understanding of MATLAB's capabilities, programming concepts, and practical application in various domains.
Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	Lectures: Engaging and interactive lectures to introduce new concepts, theories, and problem-solving techniques. Hands-on Practice: Active engagement and practical exercises are key to learning computer software effectively. Demonstration and Explanation: Instructors demonstrate software features and explain concepts using examples and visuals. Step-by-Step Tutorials: Providing clear instructions and visuals helps learners follow along and grasp software functionalities. Collaborative Learning: Encouraging collaboration among learners through group projects or peer feedback fosters a supportive learning environment. Online Resources and Documentation: Supplementing learning with online resources, official documentation, and forums enhances understanding and troubleshooting. Real-World Applications: Relating software learning to real-world scenarios increases student engagement and practical relevance.

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	**Quizzes**	2	10	4,8	2,6
	Project	1	10	14	7,8,9,10,11
	Online Assignment	2	10	6,12	1,3,5,6
	Onsite Assignment	5	10	2,4,8,10,14	7,8,9
Summative Assessment	**Midterm Exam**	1	10	7	1,2,3,5,6
	Final Exam	1	50	15	1,2,3,5,6,7,8
Total Assessment			100		

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL الحمل الدراسي المنتظم للطالب خلال الفصل **(h/sem)**	48 hrs.	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4 hrs. (2+1)
Unstructured SWL الحمل الدراسي غير المنتظم للطالب خلال الفصل **(h/sem)**	77 hrs.	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7 hrs.
Total SWL الحمل الدراسي الكلي للطالب خلال الفصل **(h/sem)**	125 hrs.		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي	
Week	**Material Covered**
Week 1	Introduction to MATLAB and its Environment
Week 2	MATLAB Variables and Data Types
Week 3	Basic MATLAB Operations and Functions
Week 4	Control Flow: Loops and Conditional Statements
Week 5	MATLAB Scripts and Functions
Week 6	Plotting in MATLAB: 2D and 3D Graphs
Week 7	Working with MATLAB Arrays and Matrices
Week 8	File I/O: Reading and Writing Data in MATLAB
Week 9	Advanced Plotting Techniques
Week 10	MATLAB Simulink: Introduction and Basics
Week 11	Simulink Models and Block Libraries
Week 12	Simulink Simulation and Analysis
Week 13	MATLAB Toolboxes and Applications
Week 14	Introduction to Image Processing in MATLAB
Week 15	Final Project and Course Recap

Delivery Plan (Weekly Practice Syllabus) المنهاج الاسبوعي العملي	
Week	**Material Covered**
Week 1	The MATLAB System, Installation, User Interface.
Week 2	Desktop Tools and Development Environment, Mathematical Function Library, The Language, Graphics, External Interfaces, Lab participation.
Week 3	Expressions, Commands, Formats, Symbolic Computation H.W_1
Week 4	Operator Precedence, MATLAB Fundamentals.
Week 5	Script File, Comments.
Week 6	Lab Participation, Programming.
Week 7	Help Menu, Constructing Symbolic Objects.
Week 8	Mid-Term Exam, Pretty Command,
Week 9	Sin, Cos, Tan, Cot, Sec, Csc Commands.
Week 10	Function M-Files, Data Import-Export, H.W_2, Programming.
Week 11	Vectors Create and Given Size and Plot, Solving Equations.
Week 12	Factorial Command, Sort Command.
Week 13	Matrices, Loops, Matlab Graphics, Solving Equations.
Week 14	Review and Assessment.
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- Brian D. Hahn and Daniel T. Valentine, Essential MATLAB for Engineers and Scientists, 7th Edition, Elsevier, London 2019. 2- Stormy Attaway, MATLAB, 2016, United States	No
Recommended Texts	1- Rudra Pratap, Getting Started with MATLAB, 2010, United States 2- Duane Hanselman and Bruce Littlefield, Mastering MATLAB, 2019, United States	No

Websites	- https://www.mathworks.com/help/ - https://www.mathworks.com/matlabcentral/answers/ - https://www.mathworks.com/products/matlab-online.html - https://octave-online.net/

APPENDIX:

GRADING SCHEME مخطط الدرجات				
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Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	ORGANIC CHEMISTRY	Module Delivery	
Module Type	BASIC	Theory √ Lab √ Tutorial √ Seminar √	
Module Code	MPH1206		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	Semester of Delivery	2
Administering Department	MPH	College	
Module Leader	Dawood Salman	e-mail	
Module Leader's Acad. Title	Professor	Module Leader's Qualification	PhD of Science in Chemistry
Module Tutor	Dawood Salman	e-mail	
Peer Reviewer Name		e-mail	
Review Committee Approval		**Version Number**	

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسي ة	- Teaching the students organic chemical reactions, chemical structures, knowing the form of organic compounds, and how to - Clarifying the mechanics of organic reactions and their practical applications aimed at developing and keeping pace with scientific development. For organic chemistry. - Teaching and educating students on all the necessary and necessary information related to organic chemistry, qualifies them to work and research in all areas of organic chemistry
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	1- Sudents will be able to obtain knowledge and understanding of organic chemistry. 2- Students will be able to obtain knowledge and understanding of structures . 3- Students will be able to obtain knowledge and understanding of pile mechanics . 4- Students will be able to obtain knowledge and understanding of the functional communication of organic chemistry. 5- Students will be able to obtain knowledge and understanding of classical and modern methods of extraction. 6- Students will be able to obtain knowledge and understanding the research through analyzing the published research papers and writing a miniresearch from them.
Indicative Contents المحتويات الإرشادي ة	1- Introducing students to organic chemistry and its importance in our lives 2- Introducing students to hydrocarbons and their types. (Alkanes, alkenes and alkynes). 3- Introducing the student to methane gas and the method of its preparation. 4- Introducing students to alkanes and their properties. 5- Introduce students to the interactions of alkanes. 6- Defining and unsaturateding hydrocarbons and their types. 7- Introducing the student to alkenes, naming them and their characteristics. 8- Introducing students to the methods of preparing alkenes. 9- Introducing the student to the reactions of alkenes. 10- Familiarizing students with the detection of alkenes. 11- Introducing the student to the entities and their characteristics and naming them 12- Introducing the student to the interactions of alkynes 13- Introduce the student to the reactions of aliphatic cyclic compounds 14- Identification, description and naming of aromatic compounds. 15- Introducing the student to the reactions of aromatic compound.

Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	1- Following Lecture method and the use of the interactive whiteboard 2- Explanation and clarification Providing students with the basics and additional topics related to the outputs of chemical thinking and analysis organic. 3- Forming discussion groups during lectures to discuss organic chemistry topics that require thinking and analysis 4- Asking students a set of reflective questions during the lectures, such as what, how, when and why for specific topics 5- Giving students homework that requires self-explanations in causal ways

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفص ل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفص ل	100	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفص ل	175		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	6	10	2,4, 7,9, 11,14	A-1, A3,and A4
	Seminar	7	5	2,4,6,8,10,12	A2 and A4
	Projects / Lab.	3	5	6,10, and 14	A6
	Discussion of the reports	3	10	5,9, and 13	A3, A4 and A5
	Report/Lab	2	10	All experiments	A3, A4 and A5
Summative assessment	**Midterm Exam**	1	10	8	A1, A3 and A3
	Final Exam	1	50	15	A1, A2, A3, A4 and A5

Total assessment	100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظر ي	
	Material Covered
Week 1	General Principles in Organic Chemistry.
Week 2	Saturated Aliphatic Hydrocarbons.
Week 3	Aliphatic Cyclic Compounds.
Week 4	Alkanes.
Week 5	Alkenes.
Week 6	Alkynes.
Week 7	Organic Halides.
Week 8	**Mid-term exam.**
Week 9	Ethers.
Week 10	Alcohols.
Week 11	Aldehydes and ketones.
Week 12	Carboxylic Acids.
Week 13	Introduction to Amines.
Week 14	Ammonium Compounds.
Week 15	**Final exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختب ر	
	Material Covered
Week 1	Laboratory safety and Acquaintance with glassware and apparatus in the organic chemistry laboratory
Week 2	Exp1: Determine the melting point by means of a capillary tube for some organic substances and using the point m device.

Week 3	Exp2: Analyzing the melting of some solids and choosing the appropriate solution for recrystallization.
Week 4	Exp3: Determine the boiling point by means of a capillary tube for some organic substances and using the point m device.
Week 5	Discussion for the reports of experiment 1, 2 and 3.
Week 6	Discussion of Project-1
Week 7	Ex4: Extraction (base acid extraction).
Week 8	Ex5: Crystallization Filtration Types
Week 9	Discussion for the reports of experiment 4 and 5.
Week 10	Discussion of Project-2
Week 11	Ex6: Application of some methods of separation of sublimated organic compounds.
Week 12	Ex7: TLC Extraction
Week 13	Discussion for the reports of experiment 6 and 7.
Week14	Discussion of Project-3
Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدري س

	Text	**Available in the Library?**
Required Texts	1- Organic chemistry, Morrison and Boyd . 2- Chemistry, Clayden J., Creeves N., Warren S and Wother P., Oxford, 2001.	
Recommended Texts	Organic Chemistry	
Websites	https://en.wikipedia.org/wiki/Organic_chemistry	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
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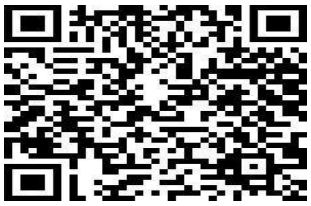

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Ministry of Higher Education and Scientific Research - Iraq
Al-Warka University College
Department Of Medical Physics

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	ELECTRICITY AND MAGNETISM			Module Delivery	
Module Type	BASIC			Theory √ Lab √ Tutorial √ Seminar √	
Module Code	MPH1207				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level	1		Semester of Delivery		2
Administering Department	MPH		College		
Module Leader	Arshad Hammoud		e-mail		
Module Leader's Acad. Title		Professor	Module Leader's Qualification		PhD of Science in Physics
Module Tutor	Arshad Hammoud		e-mail		
Peer Reviewer Name			e-mail		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخر ى			
Prerequisite module	NO	Semester	-
Co-requisites module	NO	Semester	-

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسي ة	The course aims to provide students with information and skills in static electricity and magnetism necessary for the undergraduate level. Potentially qualifying undergraduate studies in the physical sciences, building a strong background for those who will continue to study materials related to the applications of static electricity and magnetism.
Module Learning Outcomes مخرجات التعلم للمادة الدراسي ة	1. Recognizing the Charges at rest: Electrostatics Charges in motion: Electric current . 2. Explaining COULOMBS LAW AND ELECTRIC FIELDS 3. .Explaining CURRENT, RESISTANCS. 4 . Discussing the reaction and involvement of atoms in electric circuits. 5. Describing electrical power, charge, and current. 6. Defining Ohm's law . 7 .Explaining the LENZ S LAW 8. Identifying the basic circuit elements and their applications. 9. Discussing the Magnetism force in magnetic field. 10. Discussing the magnetic moment , magnetic field.
Indicative Contents المحتويات الإرشادي ة	DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction, Introduction to mesh and nodal analysis. AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. RL, RC and RLC circuits - Frequency response of RLC circuits, simple filter and band-pass circuits, resonance and Q-factor, use of Bode plots, use of differential equations and their solutions. Time response (natural and step responses. Fundamentals Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, current and voltage division, input resistance, output resistance, coupling and decoupling capacitors, maximum power transfer, RMS and power dissipation, current limiting and over voltage protection. Components and active devices – Components vs elements and circuit modeling, real and ideal elements. Introduction to sensors and actuators, selfgenerating vs modulating type sensors, simple circuit interfacing.

	Diodes and Diode circuits – Diode characteristics and equations, ideal vs real. Signal conditioning, clamping and clipping, rectification and peak detection, photodiodes, LEDs, Zener diodes, voltage stabilization, voltage reference, power supplies
Learning and Teaching Strategies استراتيجيات التعلم والتعلي م	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL **(h/sem)**الحمل الدراسي المنتظم للطالب خلال الفص ل	75	**Structured SWL** **(h/w)**الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفص ل	100	**Unstructured SWL** **(h/w)**الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفص ل	175		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	5	3,5,7,9,10,11,13	1,2,3
	H.W	1.30	10	2,4,8,12,13	3,7,9
	seminar	6	6	2,4,8,12,13	4,5,6
	Discussion /experiments	10	5	6,7,12,13,14	4,5,6,10
	Projects / Lab.	15	5	6,13,14	5,9,10
	Report/lab	9	9	1,2,3,4,5,8,9,10,11	4,5
	Midterm Exam	1	10	6	6,8,9

Summative assessment	**Final Exam**	3	50	15	all
Total assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Charges at rest: Electrostatics.
Week 2	Charges in motion: Electric currents.
Week 3	COULOMBS LAW AND ELECTRIC FIELDS.
Week 4	POTNTIAL, CURRENT.
Week 5	RESISTANCS.
Week 6	OHMS LAW.
Week 7	Med- term exam
Week 8	RESISTANCE; SIMPLE CIRCUTS.
Week 9	KIRCHHOFF S LAWS EQUIVALENT.
Week 10	Magnetism.
Week 11	IN MAGNETIC FIELDS.
Week 12	MAGNETIC MOMENT, SOURCES OF MAGNETIC FLUX FORCES.
Week 13	LENZ S LAW.
Week 14	MAGNETIC FIELD
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
weeks	**Material Covered**
Week 1	EXP 1: Capacitive Reactance in the AC Circuit
Week 2	EXP 2: Study of Self-Inductance and Inductive Reactance in Alternating Current Circuits
Week 3	EXP 3: Capacitor Charging
Week 4	EXP 4: Earth's Magnetic Field
Week 5	EXP 5: Determining the Internal Resistance and Maximum Power of a Cell

Week 6	Discussion for the project 1
Week 7	EXP 6: Discussion for the experiments (1-5)
Week 8	EXP 7: Mapping the Electric Field
Week 9	EXP 8: Determination of Resistance of Resistors in Parallel Connection
Week 10	EXP 9: Slide Wire Wheatstone Bridge
Week 11	EXP 10: LCR Resonant Circuit Series
Week 12	Discussion for the experiments (6-9)
Week 13	Discussion for the project Project 2
Week14	Discussion for the project 3
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدري س		
	Text	**Available in the Library?**
Required Texts	Schaum's outlines of theory and problems of college physics More Physics: electric charges and fields – electromagnetism	
Recommended Texts	Electronics basics books	
Websites	https://books-library.net/free-32056793-download	

APPENDIX:

GRADING SCHEME مخطط الدرجا ت				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي